

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner : Christina Chern  
Applicants : Donald James Highgate et al  
Serial No. : 10/568,241  
Filed : March 8, 2007  
Art Unit : 1725  
Conf. No. : 9552  
For: PHOTOVOLTAIC CELL

Commissioner for Patents  
P O Box 1450  
Alexandria, VA 22313-1450

DECLARATION OF SIMON BOURNE, Ph.D.

Sir:

I, Simon Bourne, of ITM Power Plc, Unit H, Sheffield Business Park,  
Europa Link, Sheffield, S9 1XU, United Kingdom, hereby declare:

THAT, I am an inventor of the above-referenced application;

And being thus duly qualified, do hereby declare as follows:

1. I have read the Office Action and the cited references. In particular, I note that the claims allegedly fail to comply with the enablement requirement, because it is not disclosed how the membrane and electrode assembly would function as a photovoltaic cell.
2. A basic photovoltaic cell is simple. It is well known that a semi-conductor wafer can be provided such that, when light energy strikes a cell comprising such a material, electrons are knocked loose from the atoms in that material. If electrical conductors are attached to the positive and negative sides, forming an electrical circuit, the electrons can be captured in the form of an electric current. Accordingly, all that is required for the construction of a simple photovoltaic cell is a semi-conductor material, such as silicon, that can

form an electric field, positive on one side and negative on the other, and electrical contacts on front and back, and which can be exposed to light.

3. The requirements of a photovoltaic cell are described in the Application. In particular, the specification describes a membrane-electrode assembly wherein the electrodes provide the contacts and the membrane can be irradiated with light. It is therefore necessary and sufficient for a photovoltaic cell only that the membrane should act in the same way as a semi-conductor material, and this can readily be achieved by one of ordinary skill in the art, after reading the subject specification, with or without the teaching of specific membrane materials given in the specification.

I hereby further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

By:

  
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Simon Bourne

Date: 13<sup>th</sup> June 2011